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Locke on Space, Time and God

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1. Introduction

Locke is famed for his caution in speculative matters: "Men, extending their enquiries beyond their capacities and letting their thoughts wander into those depths where they can find no sure footing; 'tis no wonder that they raise questions and multiply disputes" (Essay I i 7; 47). And he is skeptical about the pretensions of natural philosophy, which he says is "not capable of being made a science" (Essay IV xii 10; 645).[1] And yet Locke is confident that "Our reason leads us to the knowledge of this certain and evident truth, that there is an eternal, most powerful and most knowing being; which whether anyone will please to call God it matters not" (Essay IV x 6; 621).[2] His certainty about the existence and attributes of God, I will argue, led him to surprisingly strong convictions about a deep and disputed problem at the intersection of seventeenth century metaphysics and natural philosophy: the absolute reality of space and time. Specifically, he based his absolutist conceptions of space and time on God's literal omnipresence and eternity. Leibniz probably had Locke in mind (along with Newton and others) when he inveighed in 1716 against "real absolute space, the idol of some modern Englishmen" (LC 3, 3; 14). And Leibniz was right a decade earlier to voice through his mouthpiece Theophilus the suspicion that, despite Locke's claim to know nothing about the substance of void space (Essay II xii 17; 174), "there are grounds for thinking you know more about it than you say or believe that you do. Some people have thought that God is the place of objects" (NE 149).

1. Peter Anstey emphasizes that despite his skepticism about natural philosophy ever being made a full science, Locke is nevertheless committed to 'experimental philosophy', i.e., to the use of experiment and observation in natural philosophy rather than speculation and hypotheses (2011: 3–5, 25–30).

2. There are many excellent discussions of Locke's cosmological demonstration of the existence of God, such as Ayers (1991: Vol. 2, Ch. 14) and Nuovo (2017: Ch. 6).

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In pressing the spatio-temporal immanence of Locke's God, I do not go as far as Klever (2012) who ascribes to him a "disguised Spinozism". Locke's God is certainly not material, nor identical with nature.[3] But I go much further than Nuovo who describes Locke's God in traditional terms: "a transcendent authority that is supposed to be unlike anything in the world" (2011: 184). I aim to corroborate Leibniz's suspicion that Locke's God is the "place of objects" by showing that Locke's late conversion to absolutism turns on making God's immensity and eternity co-extensive with absolute space and time, that is, the place of objects, just as Newton did.[4] My case will depend partly on the *Essay* but much more on an Locke's late, under-examined correspondence with the Dutch theologian Philipp Van Limborch.[5]

In Section 2 below, I reconstruct the trajectory of Locke's metaphysics of space and time, which begins as Cartesian, passes through a relationism similar to Leibniz's, and ends with Newtonian absolutism. Previous defences of Lockean absolutism have relied primarily on the published *Essay* and its final Draft C (Gibson 1960; Gorham & Slowik 2014). And some commentators maintain that Locke remains ambivalent or steadfastly relationist in these texts (Rogers 1978; Thomas 2016). In Section 3 I attempt to strengthen substantially the case for late Lockean absolutism by appeal to his private 1697–98 correspondence with Van Limborch, arguing that the demonstrations he there offers for the unicity of God presuppose a strongly absolutist conception of 'pure space' (as he calls it). The remaining Sections 4–6 show how the correspondence clarifies three related, and much-disputed, problems of Lockean metaphysics: God's relation to space and time; action at a distance; and the principle that two things (of the same kind) cannot occupy the same place.

2. Absolute Space and Time/Divine Immensity and Eternity[6]

Leading up to the published *Essay* (1690) Locke's ontology of space and time evolves dramatically and in parallel with the conceptual trajectory of the seventeenth century as a whole. In the earliest (1671) draft 'A' of the *Essay*, he sides with the Cartesian view that body is "the thing most properly capable

3. Locke sometimes seems to speak of God and nature interchangeably, e.g., *Essays on the Laws of Nature* (1987: 199) and *Two Treatises on Government* (1988): Treatise 1, Chapter 11, Sections 111 and 116; but in all of these cases Locke does not identify God with the natural world, a la Spinoza, but merely emphasizes that the moral natural law is derived from God. See Nuovo (2011: 185). Cf. Klever (2012: 73–74).

4. See Gorham and Slowik (2014) for an earlier, different defense of this reading.

5. I thank Peter Anstey for drawing my attention to these letters.

6. This section conforms to and is influenced by the corresponding discussion in Gorham and Slowik (2014).

of extension" (NR 79). But he soon renounces the reduction of the idea of extension to body: "we can apply in our thoughts the ideas of these lengths to those distances beyond the confines of the world where there are no bodies at all" (NR 243). He still insists, however, that space is merely conceptually (rather than really) distinct from body "which is the only reall thing that exists and has extension that we know" (NR 253). Locke later develops a more systematic account of space and time, which we would call 'relationist'. Thus, in a 1676 journal entry, he introduces the notion of a 'distance' relation common to the ideas of space and time. Spatial distance is "a simple relation arising [between] two bodies or beings that do not immediately touch one another" (Early Draft 77). Temporal distance is "the relation between two things which have existed one before another" (Early Draft 79). Locke emphasizes that "space or extension separated in our thoughts from body seems to have no more real existence than number has without anything to be numbered" (Early Draft 77).[7]

Locke's evolving ontology of space owes a great deal to the imaginary space/time tradition of late medieval philosophy, which conceives of space/time beyond/before the world as bare capacities for possible dimensions and motions.[8] This debt is clear in the penultimate (1685) Draft 'C' of the *Essay*, where Locke further develops an ontology for space and duration independent of extension and motion. In the chapter 'of Space' he insists that "the clear & distinct idea of simple space distinguishes it plainly & sufficiently from body since its parts are inseparable, immovable & without resistance to the motion of body" (C 16, 11).[9] He says we measure distances beyond/before the world by "preconceived ideas of imaginary space & duration" (C 18, 11) and that the idea of extension is "so much of that imaginary space as the bulk of that body takes up or lies betwixt the extremities of it" (C 18, 11). But when we come to the published *Essay*, the 'imaginary' qualifier is conspicuously absent from the passages just quoted. For example, he now says we measure distances "by preconceived ideas of *certain lengths* of space and duration" and that "the extension of any body is so much of that infinite space as the bulk of the body takes up" (Essay II xv 8; 200–201; italics added). Or compare the C vs. published accounts of 'time and place' which for Locke are the sensible measures of infinite 'duration and expansion':

Draft C: Place and Time are real relations resulting from the existence of real different beings and in their general acception commonly stand for so much of those infinite uniform oceans as is set out and supposed to be distinguished from the rest by real and distinguishable marks and fixed boundaries & so seem to be

7. See also AG 78. For a more detailed account of Locke's early relationism, see Thomas (2016).

8. On this tradition, and Locke's relation it, see Grant (1981: esp. 238–240) and Thomas (2016: 309).

9. See also Locke's 'Examination of Malebranche' (Works 8, 248).

determinate portions of those infinite extensions of space and duration we have in our imaginations. (18, 11)

Published Essay: Time and Place taken thus for determinate distinguishable portions of those infinite abysses of space and duration, set out or supposed to be distinguished from the rest by marks and known boundaries. (Essay II xv 6; 199)

In the published definitions: (i) place and time are not mere relations among 'marks' standing for the parts of space and duration; they are simply determinate portions of space and duration themselves; (ii) infinite space and duration are no longer said to be 'in our imagination'.[10] Moreover, he seems to attribute intrinsic quantity and dimension to pure space apart from body:

> we sometimes speak of Place, or Distance or Bulk in the great Inane beyond the confines of the world, when we consider so much of that space as is equal to or capable to receive a body of any assigned dimensions, as a cubic foot. (II xv 7; 200)[11]

And he insists, just as strongly as Newton, on the distinction between "those uniform Boundless Oceans of Duration and Space" and "certain fixed points in sensible beings we reckon, and from them we measure out portions of those infinite quantities" (II xv 5; 198).

It is likely that Locke's scruples about absolute space and time, still lingering in Draft C, were finally removed by Newton's *Principia*. Locke read this "never enough to be admired book" (Essay IV vii 3; 599) shortly after its 1687 publication and wrote an anonymous review for *Bibliotheque Universelle & Historique* (Locke 1688). Yet his drift from relationism had been long underway and his arguments for absolutism are not like the *Principia*'s Scholium on space and time. Locke bases his absolutism on three general considerations, each of which has deep historical roots.

His first argument, which was already addressed by Aristotle (*Physics* IV 7; 214a28–32), is that motion is not possible without void space. In however large or small a body, motion among its parts is impossible "if there be not left in it a void space as big as the least part . . . requisite to make room for the free motion of the parts of the divided body" (Essay II xiii 22; 177). The argument is

10. Indeed, in the *Essay* Locke dismisses the 'imaginary space' label he formerly embraced: "they term what is beyond the limits of the universe imaginary space: as if it were nothing because there is no body existing in it" (Essay II xv 4; 198). This change is also briefly noted by Ayers (1991: I, 235).

11. Locke's embrace of *temporal* absolutism in the *Essay* is even stronger. He attributes to duration itself, as distinct from its sensible measures, an intrinsic rate: "We must carefully distinguish betwixt duration and the measures we make use of to judge of its length. Duration in itself is to be considered as going on in one constant, equal, uniform course" (Essay II xiv 21).

repeated in the *Essay* (II xvii 4; 211) and also appears in the earlier Draft C (16, 25) and in the later 'Examination of Malebranche' (Works 8, 244). Locke seems to regard this argument for the necessity of an 'intramundane' void as resting on the same foundation as the ancient 'Archytas' thought-experiment, to which he also appeals in the *Essay* (II xiii 21; 175–176), about the power of someone to move their arm into the 'extramundane' space beyond the edge of a finite material world:

> the same possibility of a body's moving into a void space beyond the utmost bounds of body, as well as into a void space interspersed amongst bodies, will always remain clear and evident, the idea of empty pure space whether within or beyond the confines of all bodies being exactly the same. (Essay II xvii 4; 211–212)[12]

But in spite of its generality Locke did not rest his case for absolute space on the motion argument. He surely knew that it was open to the Cartesian response that plenum motion was ultimately circular.[13] His two other, also very traditional, defences of absolute space (and time) were based on uncontroversial attributes of God: omnipotence and omnipresence. From omnipotence, Locke argues that God can certainly annihilate a finite portion of matter, during which time "it is evident that the space that was filled by the annihilated body will still remain and will be a space without body" (Essay II xiii 21; 176). This was a favourite argument of contemporaneous proto-absolutists well-known to Locke such as Barrow (Mathematical Works I, 155). and Gassendi (Collected Works 387). But like the argument that God *could* move the entire universe it establishes at most only the *possibility* of void space. Furthermore it is much more compelling for intra- vs. extramundane space. For a local void would have a specific shape and dimensionality circumscribed by the surrounding matter; but this is not the case for a supposed indeterminate void beyond the finite universe. In his relationist phase, Locke denied any objective quantity in extramundane void space: "it can never be truly said that the utmost superfices of the world is a foot distant from any thing, if there be nothing really existing beyond it" (Early Draft 102). And for essentially the same reason, the 'hole' argument is ineffective for even local intervals of *empty time*. As Leibniz observes in the *Nouveaux Essais*: "If there were a vacuum in space one could establish its size. But if there were a vacuum in time, i.e. duration without change, it would be impossible to establish its length" (NE 155).[14]

12. This point is discussed briefly, though critically, by Stuart (2013: 66–67).

13. See Descartes, *Principles of Philosophy* 2, 33; CSM 1 237

14. And Leibniz correctly diagnoses dimensionality as the source of the asymmetry: "if space were only a line, and bodies were immobile, it would also be impossible to establish the length of

For such reasons, Locke's preferred basis for absolutism is God's attribute of omnipresence, that is, immensity in space and eternity in time. Near the conclusion of the *Essay*'s long chapter on space, he concludes that conceptually "we have as clear an idea of space distinct from solidity as we have of solidity distinct from motion or motion from space". He then proposes a stark ontological choice:

> But whether any one will take Space to be [i] only a relation resulting from the existence of other beings at a distance; or whether they will think . . . [ii] the inspired Philosopher St. Paul, *In Him we live, move and have our Being*, are to be understood in a literal sense, I leave every one to consider. (II, xiii, 26; 179; numerals interpolated)

Despite the coy tone, Locke clearly privileges the 'inspired' Pauline scripture [ii] which makes God's spatial presence a literal ground for infinite space rather than a mere relation among bodies [i]. An important virtue of the argument from omnipresence is that it applies equally to God's immensity and eternity, as Locke emphasizes: "God, everyone allows, fills eternity, and tis hard to find a reason why anyone should doubt that he likewise fills immensity" (Essay II xv 3; 197). Similarly, in the chapter on Infinity, Locke responds to those who claim to have a clearer idea of infinite duration than infinite extension that since God is eternal, and there is no matter beyond the world,

> those philosophers who are of the opinion that infinite space is possessed by God's infinite omnipresence, as well as infinite duration by his eternal existence, must be allowed to have as clear an idea of infinite space as of infinite duration. (Essay II xviii 20; 222)

On this account, it is the eternity of God which best enables us to conceive that "duration in itself is to be considered as going on in one constant, equal uniform course" (Essay II xiv 21; 190).[15]

Still, some recent commentators have suggested that Locke remains strictly non-committal, even in the published *Essay*, about the ontology of pure space and time—that he really does "leave every one to consider" (II, xiii, 26; 179) for themselves whether to follow Paul (and Newton), or stick with relationism.[16] To be sure, Locke himself emphasizes that his principal aim in the chapter on space

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the vacuum between two bodies" (NE 155). See further Bennett (1966: 175–176).

15. This highly 'Newtonian' characterization of absolute time is not in Draft C.

16. The consistently relationist view of Locke is defended by Rogers (1978), Lennon (1983b) and, more recently, by Thomas (2016). Gibson (1960) and, more recently, Gorham and Slowik (2014) hold that he converts to absolutism. Ayers (1991) and, more recently, Jacovides (2016), maintain that Locke is ultimately ambivalent or agnostic.

is to secure the anti-Cartesian conceptual distinction between space and body: "the question being here whether the idea of space or extension be the same with the idea of body, it is not necessary to prove the real existence of a vacuum but the idea of it" (Essay II xiii 23; 178). However, I will now argue that a later correspondence with an old friend, which develops the argument from omnipresence in great detail, decisively confirms Locke's final commitment to an absolutist ontology of space.

3. Omnipresence in the Van Limborch Correspondence

The Remonstrant theologian Philip Van Limborch was one of Locke's most long-standing and trusted Dutch friends. They moved in the same liberal intellectual circles during Locke's long 1680s sojourn in the low countries and sustained a 20-year friendship that was philosophical and (for the most part) affectionate. After leaving Amsterdam for Rotterdam in 1687, Locke wrote to Van Limborch, "Warm me to life again with your letters . . . lest I grow utterly torpid" (L905; Woolhouse 249). Their discussions gravitated to theologico-political matters such as toleration[17] but I am concerned with a 1697–98 exchange focused on God's unity and omnipresence. Locke's letters were written with care, during a period of intense intellectual activity. Although by then retired to Oates, and in declining health, Locke was embroiled in controversies with Stillingfleet and Edwards in the wake of the *Essay* and *Reasonableness*. He trusts Van Limborch not to publicize ideas which might generate additional controversy, and so writes openly (though with frequent caveats). In one of the few recent commentaries on this exchange, Klever dismisses Locke's defense of divine unicity—"does not contain anything new in comparison with traditional theology" (1989: 340). While I believe there is novelty in Locke's arguments, their real importance is the light they shed on several knotty features of Lockean metaphysics, especially the ontology of space and time.

The exchange begins in the spring of 1697 with apologies from Locke for the longish gap in their communication—which he attributes to "public affairs and private infirmity" (L2209; 6, 20)—and approval from Limborch (L2222) of certain theological points in the *Reasonableness of Christianity*. The exchange takes a more philosophical turn in the fall, when Van Limborch requests, on behalf of the Amsterdam "*vir primarius*" (L2318; 6, 208) Johannes Hudde (though without naming him) "arguments by which the unity of God is most solidly proved" (L2318; 6, 207). Hudde was obsessed with the question of unicity—he had pes-

17. The *Letter Concerning Toleration* was probably dedicated to Van Limborch (L1146; Woolhouse 2007: 270).

tered Spinoza about the same problem 30 years earlier[18] and was also unsatisfied with Grotius's treatment—and wondered if Locke had addressed the issue in his still un-translated *Essay*. Hudde demanded a proof of divine unicity that was "irrefragable" and "in no way labored" (L2318; 6, 207).

About a month later, Locke drafted a lengthy and detailed response (L2340) partly translated into French by Coste. In the Latin cover letter for Van Limborch Locke expresses puzzlement that any theist would doubt the uniqueness of God. However, he also observes "as I take this time to think about it: the mind must be raised to higher level than ordinary philosophizing in order to prove divine unicity philosophically, or as one might say, physically" (L2340; 6, 245).[19] Yet, in the French part of the letter intended for Hudde Locke omits his main arguments for divine unicity. He merely says he is confident that the unity of God can be proved as easily as his existence but is reluctant to become embroiled in further "religious controversies" owing to his "love of peace" (L2340; 6, 243).

We know that Locke omitted from this letter his full response to Hudde's prompt since he saved a much longer draft of Coste's French translation. The draft presents a number of detailed considerations in support of divine unicity. Locke observes that the idea of God seems to imply uniqueness since otherwise we would have two omnipotent and omniscient beings "who exist independently of one another" (L2340; 6, 785). His point seems to be that omnipotence together with omniscience entail that at least one of these putative Beings would depend on the other. However, since "we don't understand anything about God by direct consideration of his nature" Locke prefers proof from God as creator of what we *do* perceive: "we must elevate our thoughts to what has made these things" (L2340; 6, 785). He then argues that only an all-powerful (and thinking) being could have made other thinking beings[20] and insists that "it is contrary to reason to suppose an additional all powerful being since one such being can make as much as a hundred" (L2340; 6, 785). He throws in a moral argument as well: it would be absurd to admit more than one God "since that would put into question his sovereignty and honor" (L2340; 6, 785).

Locke confesses that the moral argument is merely probable and so does not meet Hudde's demand for a demonstration (L2340; 6, 786). So he ventures an additional, novel argument by which he says "it can be proven demonstratively, if I'm not mistaken, that there cannot be more than one God" (L2340; 6, 786). The

18. See Gebhardt IV, 181–187. For discussion, see Di Biase (2014: 319–320) and Klever (1989: 330–332).

19. In the *Essay*, Locke mentions, but does not demonstrate, that "the existence of more than one God" is "contrary to reason", i.e., "irreconcilable to our clear and distinct ideas" (Essay IV 17 23).

20. Cf. Essay IV, 10, 1–6; For more detailed discussion of these three preliminary arguments, see Di Biase (2014).

argument, which will be treated in detail shortly, is based on God's omnipresence. If there were two (or more) Gods they would be in the same place. Since this is impossible "it follows demonstratively that there can be only one God" (L2340; 6, 786).

But, as noted above, none of these speculations were actually sent to Van Limborch, or Hudde, only a chary and heavily abridged letter expressing Locke's reluctance to enjoin religious controversies. Not surprisingly, Van Limborch answers on behalf of Hudde (whom he now names explicitly) that "he very keenly desires to see your arguments" and reassures Locke of his discretion (L2352; 6, 258). Early in the new year, Locke obliges his Dutch friend with a new letter on unicity (L2395). In the Latin preface Locke urges Van Limborch to notify him if he finds anything in the letter "not solidly or not cautiously enough expressed" (L2395; 6, 325). The detailed philosophical discussion is again in French though this time Locke's original English survives. This letter more thoroughly explains the argument from *omnipotence* to unity: "two omnipotents are inconsistent" since "the will of the one must prevail over the will of the other" (L2395; 6, 789).[21] It also makes clearer the relevance of *omniscience*, namely that at most one of two Gods must lack the perfection of being able to conceal his thoughts from the other. But Locke maintains that *omnipresence* is the most fundamental of God's attributes, since the others depend upon it: "for if he is shut out of any place he can neither operate there nor know what he is doing there, and so is neither omnipotent not omniscient" (L2395; 6, 789). Locke accordingly devotes most of Letter 2395 to a more thorough articulation of the argument from immensity to unity. As in the previous letter, it turns on the impossibility of co-location.

Van Limborch replies that although he found Locke's arguments for divine unicity "invincible" (L2410; 6, 353) he had not shared them with Hudde. He feared that Hudde, a strict Cartesian, would be offended by the argument from omnipresence: "For the Cartesians, spirit is thought; but thought has no relation to space and accordingly the divine essence is not in space, rather omnipresence is accorded to it only relatively with respect to its operations" (L2410; 6, 353).[22] Locke acquiesces, quickly re-sending the French letter with the offending argument excised (L2413). But in the Latin preface to Van Limborch he complains, "I have now omitted that argument from omnipresence which I believe is the only a priori argument by which the unity of the Godhead can be demonstrated" (L2413; 6, 365). Hudde is still not satisfied (L2432) and Locke half-heartedly tries once more: "it being the nature of the infinite that nothing can be taken from it and nothing added to it . . . the eternal independent being is but one" (L2443; 6, 792). But Limborch signals Hudde's desire to conclude the discussion (L2596; 6, 639).

21. See further Di Biase (2014: 324) and Lascano (2016: 473–474).

22. On the role of Hudde's Cartesianism in the exchange, see Di Biase (2014: 325–326) and Klever (1989: 341–344).

I will now argue that the Limborch letters, written nearly a decade years after the *Essay*'s first edition, bear decisively on the controversial issue of Locke's final ontology of space and time. On his former relationist view, spatial attributes like place, dimensionality and size apply to bodiless domains only through a derivative association with bodies. For example, the relationist holds it is meaningful to speak of a certain 'distance' beyond the finite world only by referring to the size of a body that would measure that distance. The Limborch letters strongly confirm God's actual presence in a space that is infinite and independent of body, that is, "pure" (Essay II xiii 13–14; 172–173).[23] His basic argument against shared omnipresence, and so for divine unicity, is based on the impossibility of two beings (of the same kind) existing in the "same physical point of space" (L2340; 6, 786). In both main letters, he emphasizes that this principle of individuation applies equally to the parts of matter and to "what is known as *pure space*, which is very far removed from matter" (L2340; 6, 786). And in the early 1698 letter he makes it clear that God occupies an infinite space with intrinsic structure and parts. If two Gods were in the same place they would be the same God, just as two bodies in the same place. But Locke is explicit that this does not depend on bodies, or modal relations among bodies, but on the common spatial structure of bodies, God and pure space itself:

> Nor let this way of arguing be thought to reach body alone and the parts of matter: it will be found to hold in that which is the remotest from it, I mean *pure space*. For two physical points of space can no more be brought into one than two physical atoms of matter. (L2395; 6, 790)

If Locke were still a relationist about space, his stipulation that the parts of pure space cannot coincide, regardless of bodies, would make no sense. Rather, he has embraced a space like Newton's that has its own individual parts, distances and 'physical points' no less than bodies.[24]

One recent proponent of a steadfast Lockean relationism, Emily Thomas (2016), has maintained that when Locke attributes intrinsic structure to pure space in the *Essay*—for example, "in the great Inane, beyond the confines of

23. Of course, Locke does not admit our idea of infinite space (or duration) to be *positive* or actual but merely *negative* or potential, any more than of infinite number (Essay II xvii 13–14; 216–217). But this is not because he is dubious of Newton's 'absolute, true and mathematical quantities.' See Lennon (1983a) on this point.

24. Newton, *Principia* (scholium on space and time): "Just as the order of the parts of time is unchangeable, so too, is the order of the parts of space. Let the parts of space move from their places, and they will move (so to speak) from themselves" (2004: 66). *De Gravitatione*: "the parts of space are individuated by their positions so that if any two parts could change their position they would change their individuality at the same time and each would be converted numerically into the other" (2004: 25).

the world, when we consider so much of that space, as is equal to or capable to receive a body of any assigned dimensions, as a cubic foot" (Essay II xv 7; 95)—"these remarks merely attribute quantity and dimension to our *idea* of empty space, not to space itself" (2016: 317). Thomas posits that Locke is "careless about the differences between ideas and the things they signify" in certain crucial passages of the *Essay* and this misleads "proponents of the absolutist reading" (2016: 319). Charity notwithstanding, it is hard to decide whether Locke is indeed careless in such remarks. But I would stress that the Van Limborch correspondence comports fully with the most absolutist language of the *Essay*, and is clearly concerned with ontology rather than ideas since the entire issue is how to demonstrate the unicity of God. In both works, he attributes a dimensional, quantitative structure to "pure space" which he in turn associates with the immensity of God (hardly a mere idea).

4. Holenmerism

I want to consider now what the pure space of the Limborch letters tells us about Locke's view of the exact relation between God's substance and spatial extension, which was hotly debated in the seventeenth century. All philosophers endorsed the divine attribute of omnipresence or immensity, but there was a spectrum of opinion about the precise manner of this presence. At one end are Descartes and Leibniz who granted to God a mere presence of power: "in God and angels and in our mind I understand there to be no extension of substance, but only extension of power" (AT 5 343; CSMK 373). This is the view Van Limborch attributes to Hudde (L2410; 6, 353) and which Locke derides in response: "Thought is an action that does not exist of itself but is an action of some substance" (L2413; 6, 365).[25] At the other end of the spectrum is the view that God is present in space in the way bodies are, that is, with *partes ex partes*. This is the late view of Henry More and of Newton: "He is omnipresent not only virtually but substantially; for action requires substance" (*General Scholium*, Newton 2004: 91). A middle way, dubbed *holenmerism* by More, is that God is really present in space but not by having spatial parts; rather, God is somehow present entirely everywhere: "*whole in the whole and whole in all the parts*" (More 1662: xii). This is the early view of Henry More, and many other early moderns and medievals.[26]

It is clear even in the *Essay* that Locke's God has more than mere presence of power. Locke insists that we conceive of God as 'filling' eternity and immensity

25. Newton, *General Scholium*: "He is omnipresent not only virtually but substantially; for action requires substance" (2004: 91).

26. Such as Aquinas (ST 1a 8, 2). See further Pasnau (2011), Reid (2012) and McGuire and Slowik (2012).

even beyond all bodies: "God everyone easily allows, fills Eternity; and tis hard to find a reason why anyone should doubt that he likewise fills Immensity" (Essay II xv 3; 197). Furthermore, for both spirits and bodies he makes spatial presence a condition for action: "Spirits, as well as Bodies, cannot operate but where they are" (Essay II xxiii 19; 306). This is strongly confirmed by the Van Limborch correspondence: "if he is out of any place he can neither operate there nor know what he is doing there" (L2395; 6, 789). But Locke might seem to remain neutral as to whether God fills space holenmerically or with *partes ex partes*. Thus, Jasper Reid has concluded "Locke might have inclined to the Morean position; but officially he remained silent on the issue" (2012: 227).

But there are passages in the published *Essay* which seem to not so silently oppose the holenmerist view, in favor of God's real extension. For example, in a discussion of the motion of spirits Locke dismisses as "unintelligible" the view that spirits cannot change place because "spirits are not in *Loco* but *Ubi*" (Essay II xxiii 21; 307). Locke's "unintelligible" target seems to be the scholastic view that God has an 'everywhere' (ubiquity) without having an extended or 'circumscriptive' place. But being in this way somewhere though not circumscriptively is essential to the doctrine of holenmerism. [27] Further, in a passage quoted earlier from the chapter on infinity, Locke endorses "those philosophers who are of the opinion that infinite space is possessed by God's infinite omnipresence, as well as infinite duration by his eternal existence" (Essay II xviii 20; 222). But Locke is flatly opposed to the temporal version of holenmerism: the *nunc stans* or *punctum stans* conception of eternity which has God somehow existing at all times simultaneously rather than successively. Locke is dismissive: "there being nothing more inconceivable to me than duration without succession . . . that *punctum stans*, if it signify anything, being not *quantum*, finite or infinite cannot belong to it" (Essay II xvii 16; 219). He had earlier made clear his preference for a successive or sempiternal model of divine eternity (Essay II xiv 27, 30; 193, 196).[28] Since God's infinite omnipresence is presumed to be analogous to his infinite duration, it follows that the former is not 'whole in all the parts', but rather *partes ex partes*, just as eternity is successive.

The account of omnipresence set out in the Van Limborch correspondence looks to be flatly inconsistent with holenmerism. As we've seen, the key premise of the unicity demonstration in both main letters is that "it is demonstrably

27. See Aquinas ST 1a 8 and 1a 52, 2 where he says that God has place neither in the way of bodies (circumscriptively) nor in the way of angels (definitively): he is simply "everywhere (*ubique*)". See also Descartes' correspondence with More, e.g., AT 5 403; CSMK 381. In dismissing this distinction Locke may be following Henry More (see the *Enchiridion*, Vol. 1, Ch. XXVII, sec. vii; p. 369). Or even Thomas Hobbes (See *Leviathan* IV, 46; EW III, 675–676). For discussion see Grant (1981: ch. 6 *et passim*), Funkenstein (1986: Ch. 2) and McGuire and Slowik (2012).

28. See also Essay II xxiii 34; 315 and Le Clerc's *Abrégé* of the Essay (1688: 16).

certain (*il suit demonstrivement*) that another real being of the same kind cannot be in the same individual point of space" (L2395; 6, 790). There cannot be more than one real being "at the very same point in pure space, because in that case two points of space would be reduced to one" (L2340; 6, 786). And as noted the impossibility of co-location applies equally to God, bodies and pure space: "for two points of physical space can be no more brought into one than two physical atoms can be brought into one" (L2395; 6, 790–791). Locke's spatio-temporal theory of individuation was already announced in the second edition of the *Essay* where he insists it is not possible "for two things of the same kind to be or exist in the same instant at the very same place; or one and the same thing in different places" (Essay II xxvii 1; 328).[29] But Locke's application of this principle to God's presence precludes holenmerism: for that doctrine states that God is whole in every part of space. And since one and the same thing can't exist (wholly) in different places, there would be as many distinct 'whole Gods' as there are distinct points of pure space. This is obviously the opposite of what Locke claims to demonstrate in the Van Limborch correspondence and shows he does not conceive of God's omnipresence as holenmeric but rather as really extended *partes ex partes*.[30]

One could perhaps avoid holenmerism's implication of divine multiplicity by restricting God's complete presence to a single point. But Locke says in that case God would not be perfect: "it is better to be everywhere in the infinite extent of space than to be shut out from any place" (L2395; 6, 689).[31] It seems the only way to retain God's perfection of omnipresence, consistent with the Lockean principle of individuation, is to spread God (immaterially) through infinite space just as bodies are spread (materially) through finite space.

29. The addition of this chapter, "Of Identity and Diversity", to the second edition was prompted by Molyneux's request for elaboration on Locke's theory of individuation (L1655; 4, 722).

30. This refutation of holenmerism is in fact very close to one that Henry More himself gave, and which Reid mentions in passing, in the Preface to the *Collection of Severall Philosophical Writings* (1662). More dismisses the claim that something can be *whole in the whole and whole in all the parts* as a 'chiming contradiction': "if all A be in B there is nothing left to be in C distant from B". He goes on to observe that for all of A to be in both B and C "is impossible in any singular or individual essence" (1662: Preface, xiii; See also *Enchiridion* Ch. 27, sec. 12). This is essentially the same argument I've derived from Lockean principles in the Van Limborch correspondence. If all of something is contained in two distinct locations or 'spatial points' then they are distinct individuals. From this More draws explicitly the conclusion we can now see as implicit in Locke: since "no being at all can be totally present at different points or parts of matter, it does unavoidably follow that Spirit is in some sort extended" (1662: Preface, xiii).

31. "A dwarf-god should fill only a tiny part of the infinite space with this visible world created by him" (Newton, translated in McGuire 1978: 123).

5. Action at a Distance

The discussion of divine, pure space in the Limborch correspondence helps clarify Locke's apparently vacillating attitude to the possibility of action at a distance. In early editions of the *Essay* Locke insisted that "bodies cannot operate at a distance" (II viii 12; 136 note). This might seem to be a corollary of the more general claim "that spirits as well as bodies cannot but operate where they are" (II xxiii 19; 306; see also II xxiii 20; 306–307). And yet the former but not the latter assertion is removed from the fourth (1700) and subsequent editions of the *Essay*. Locke explains in his third letter to Stillingfleet (1697) that Newton's theory of gravitation changed his mind about his previous claim that it is "impossible that body should operate on what it does not touch (which is all as one to imagine where it is not)" (Essay II viii 11; 135 note). Locke tells Stillingfleet that although gravitation remains inconceivable to him, thanks to Newton's "incomparable book" he now thinks his former view made "too bold a presumption to limit God's power" and promises to make appropriate revisions to the next (i.e., fourth) edition of the *Essay* (1824: Vol. 3, 457).[32]

Scholars have vigorously debated whether Locke really changed his mind about action at a distance, notwithstanding his respect for Newton, and the implications of this issue for mechanical philosophy.[33] The Van Limborch correspondence is pertinent for several reasons. First, Limborch explicitly emphasizes that Hudde, as "a thoroughly devoted Cartesian", denies that in order to operate on bodily things one must hold "that the divine essence itself is present everywhere" (L2410; 6, 353). Second, the letters are written while the controversy with Stillingfleet is raging, when Locke is supposedly rethinking the possibility of action at a distance. Indeed, he mentions the controversy (with irritation) in the October 1697 letter: "a debate that has arisen between the Bishop of Worcester, who has attacked me on a far-fetched pretext, and myself" (L2340; 6, 245). Third, as we have seen, in both the letter to Stillingfleet and the revised editions of the *Essay*, Locke frames the issue of action at a distance in theological terms: what it might be possible for God to arrange through his omnipotence. Divine omnipotence, and several other attributes, are at the heart of the Limborch correspondence. Fourth, and most importantly, the philosophical arguments in the letters turn crucially on the question of action at a distance. Locke argues that

32. See also *Some Thoughts Concerning Education* (1989: 246); Essay IV 10 19; 629.

33. For a useful, though brief, recent discussion see Jacovides (2016: Ch. 3.3). I believe my view is consistent with Jacovides's, which is that Locke finally admits action at a distance in principle (and in fact, in the case of gravity) but insists upon direct contact in the case of perception (2016: 36). I do not however, agree with Jacovides's claim that Locke gives up on the "argument that action at a distance is equivalent to saying that something can operate where it isn't" (2016: 36).

if God were not present everywhere (*par tout*) then God could not "know what happens in the parts of the universe from which he is excluded" nor could he "remedy what might happen" among the things over which he presides (L2430; 6, 786). So God's omnipresence—in the strong sense that he "really exists in various physical points" of "pure space"—is required both for his omniscience and for his omnipotence. As noted above: "if he be shut out of from any place he can neither operate there nor know what he is doing there" (L2395; 6, 789).[34]

Evidently, this defense of omnipresence depends on a very strong prohibition against action at a distance, since it constrains God's omnipotence. And yet, at the very same time, Locke tells Stillingfleet that God's omnipotence might enable gravitational action at a distance among bodies (however inconceivable we find it). Surely, Newton's incomparable book has not convinced Locke that God superadds to body a power God can't possess himself. It is possible, of course, that Locke's concession to Stillingfleet is an insincere attempt to pacify the "cassocked tribe of theologians" (L2340; 6, 245) who were then attacking the *Essay*. A more plausible (and charitable) view is that God does not really grant to bodies a non-mechanical power to act across space. Rather, his endowing matter with gravitational power amounts to God's direct intervention, at all points in pure space, whenever and wherever Newtonian bodies are subject to gravitational influence, that is, everywhere and always. This provides support, therefore, to what Matthew Stuart has labeled 'Strong Voluntarism' or the 'Wise Architect' (Essay IV iii 29; 560) view of the Lockean God's role in nature (Stuart 1998: 371). And it derives support, in turn, from Locke's apparent, cautious embrace of Newton's theory of "how matter might at first be made" (Essay IV x 18; 628). On this theory, set out in Newton's *De Gravitatione* and attributed to Locke by Coste based on a personal conversation with Newton recorded in Coste's 1729 French translation of the *Essay*, "God through his power had prevented anything from being able to enter a certain portion of pure space" (Bennett and Remnant 1978: 5; see also Conn 2003; Downing 2014; and Nuovo 2017: Ch. 6.). The Newton-cum-Lockean theory of creation is spelled out in detail in Newton's unpublished essay *De Gravitatione* which is undated but certainly precedes the *Essay* and the *Principia*.[35]

6. Co-Location and Identity

Finally, Locke's argument for divine unicity, since it turns crucially on the premise that two Gods could not be co-located, helps to illuminate what has been aptly dubbed his 'place-time-kind' principle (Gordon-Roth 2015). As already noted, near the opening of the famous 'Identity and Diversity' chapter of the *Essay* (second edition), Locke observes that it is "impossible for two things of the same kind to be or to exist in the same instant, in the very same place; or one and the same thing in different places" (Essay II xxvii 1; 328). At the beginning of the next section he says we have ideas of only three sorts of substances—Gods, finite spirits and bodies—and then indicates that these are the 'kinds' allowing of mutual coincidence: "these three sorts of substances, as we term them, do not exclude one another out of the same place" (Essay II xxvii 2; 329). He then argues that admitting same-kind co-location implies that "all bodies may be in one place; which when it can be supposed takes away the distinction of identity and diversity, of one or more, and renders it ridiculous" (Essay II xxvii 2; 329).

The Van Limborch correspondence helps us to answer several important questions that arise at the opening of this much-discussed chapter. One question is what sense of 'place' is at stake in the prohibition against same-kind co-location. In the *Essay*, Locke defines place as follows: "in simple space we consider the relation of distance between any thing and any two or more points which have not changed their distance with one another and we say it hath kept the same Place" (Essay II xiii 7; cf. 10; 169). As Aaron (1937: 154 n. 2) has observed, such a conception is obviously inadequate: opposing corners of a square are the same distance from the other two corners but they're not in the same place. But this could easily be remedied by designating all bodies in the relevant frame, not just two. Bolton has suggested that Locke's relationist conception of place might explain why two (or more) things cannot be co-located:

> Given Locke's definition of place the supposition that two bodies are in the same place at the same time yields the contradiction that two places might be the same. This is because some places that are different when referred to one pair of bodies will be identical when referred to a pair of bodies that are in the same place. (1994: 109)

Bolton's thought seems to be that if A and B are co-located, then (as below) the place of C is different from D since they are different distances from A and E, but also in the same place since they are the same distance from A and B:

C A/B D E

If this is the problem, it can be dealt with the same way as Aaron's, by including distances to all relevant bodies in the identification of place. In the above scenario this would ensure that only A and B are in the same place. But, as Locke acknowledges, which bodies we consider 'relevant' to the determination of a thing's place, in this relationist sense, is a matter of convention: "men consider and determine of this place by consideration of those adjacent things, which best serve to their purpose" (Essay II 13 9; 170). This suggests that co-location is not a matter of relationist place; for I am always (and only) co-located with myself while my relative place is indeterminate and shifting (depending on our interests).

The irrelevance of relational place to the co-location prohibition is evident in the Van Limborch correspondence because the issue there is the co-location of two or more *omnipresent* beings. Such beings bear no distance relations to any other, including one another. For this reason, Locke says God does not have a relational place any more than the universe as a whole: "we have not the idea of any fixed, distinct, particular beings in reference to which we can imagine it to have any relation of distance" (Essay II xiii 10; 171). Nevertheless, although he admits he does not know the substance of God, he insists "something I know it is and must exclude where it is all other substances (could there be any such) of the same kind" (L2395; 6, 791). So the correspondence makes clear that the relevant and more fundamental sense of co-location prohibited is co-occupation of 'pure' or physical space itself: "an other real being of the same kind cannot be in the same individual point of space for then they would be but one" (L2395; 6, 790). And, as mentioned above, he emphasizes that this principle holds even for what is "most removed" from body, that is, "pure space" itself (L2395; 6, 790).[36] Looking back to the *Essay*, this non-relational sense of place might clarify Locke's somewhat cryptic remark that "it be true that the word Place has sometimes a more confused sense, and stands for Space which any body takes up, and so the universe is in a Place" (Essay II xiii 10; 171).[37]

But this leaves open the question: what justifies the prohibition against same-kind co-location? Conn has argued that Locke's *reductio* argument in the *Essay*, leading to "all things in one place", is question-begging because it relies on the prohibition against co-location itself (Conn 2003: 66–67). He further claims that in the case of bodies the prohibition is also "question-begging" or at least "true by definition" (2003: 63–64), since an essential property of bodies, that is, solidity, implies "an utter exclusion of other bodies out of the space it possesses" (Essay II iv 4; 125). But since Locke clearly thinks the prohibition applies across

36. A referee for this Journal has rightly noted that Locke could ground the non-co-location principle, even applied to omnipresent beings, on a notion of place relative to actual bodies. But, as this quote indicates, Locke applies the principle even to the parts of pure space "most removed" from bodies.

37. On the sense of 'confused' involved here, see Ayers (1991: 234–235).

all three kinds of substances, and is not merely stipulative, it would be good to have a general and substantive rationale. Locke insists "could two bodies be in the same place in the same time, then those two parcels must be one and the same" (Essay II xxvii 2; 329). He seems to be claiming, like Leibniz, that a supposed numerical distinction is merely imaginary or nominal if there is no way to distinguish one individual from the other.

The Van Limborch correspondence further reveals the centrality of the identity of indiscernibles to Locke's prohibition against same-kind co-location: "where there is no difference neither with regard to space nor with regard to place one can have only one being" (L2340: 6, 786). And similarly if two Gods "have exactly the same power, the same knowledge, the same will, and exist equally in the same individual place, this is only to multiply sounds, but in reality to reduce the supposed plurality to one" (L2395; 6, 790). This rationale against co-location explains, to some extent at least, why the three different kinds are allowed to co-locate. Even if co-located with minds, bodies are distinguished from minds by their different attributes, for example, solidity and thought, respectively. And the infinite mind of God is distinguished from finite minds by its infinite power and wisdom. Furthermore, God and finite minds can co-locate in the way a point can infinitesimally co-locate with an endless volume. For whereas God's presence is boundless in time and space (Essay II xv 3; 197), Locke seems to think that the presence of finite minds reduces to a mathematical point. Thus, in his defense of the mobility of spirits, Locke says that "if a mathematician can consider a certain distance or a change of distance between two points, one may certainly conceive a distance and a change of distance between two spirits" (Essay II xxiii 19; 307). Finite minds clearly have place or location (Essay II xxiii 20; 307) but if they were really extended the proper analogy would be to the motion of bodies rather than points.[38]

Finally, this realist view about the co-location prohibition helps to explain the *Essay* argument that otherwise "all bodies may be in one place; which when it can be supposed takes away the distinction of identity and diversity" (Essay II xxvii 2; 329). He repeats the argument several times in the correspondence, in each case emphasizing that to suppose co-location among beings of the same kind is to suppose "a division without a division" (L2395; 6, 790). His point is simply that without an objective principle for distinguishing things otherwise similar in kind, for example, finite bodies, "all matter should be brought into one atom" (L2395; 6, 791). Distinct locations in pure space provides the needed

38. In the 'Examination of Malebranche' Locke opines that it difficult to conceive how one "unextended indivisible substance" can simultaneously entertain distinct and incompatible perceptions. (Works 8, 234–235; Cf. 219. See further Schacter (2008). But Locke's argument here is *ad hominem* against Malebranche's doctrine that we "see all things" in a simple God. Locke's own view about the extension of the soul is decidedly agnostic in this work.

principle of individuation and thereby rescues the distinction between identity and diversity.

7. Conclusion

I have argued that Locke's implicit assimilation of God's omnipresence and absolute or 'pure' space is made explicit in his demonstration of God's unicity in the correspondence with Van Limborch. I have further argued that his conception of pure space, as set out in the correspondence, sheds important light on several obscure and longstanding problems of Lockean metaphysics. Locke's spatialization of God is not unusual in his context. One of the remarkable features of seventeenth century European philosophy is the extent to which the transcendent God of medieval theology was drawn into the natural world.[39] Few were willing to follow Spinoza, with his 'deus-sive-natura', or Hobbes, with his 'corporeal deity', in making God extended or material, since they feared (with Descartes) that this would make God really divisible. But even Descartes brought God into time, though of course not into space. Ever since Leibniz provocatively remarked on the "decay" of natural religion in England, the role of English writers like More, Barrow, Charleton and Newton in grounding the "idol" of absolute space on the divine attribute of immensity has been noted. What has been less appreciated is Locke's characteristically cautious and gradual, but finally wholesale, conversion to the philosophical idolatry of his homeland.

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39. Besides references above, see further Gorham (2009).

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